Cheat sheet for interpreting coefficients from various models

1. Linear probability model with continuous X: , where Y is 0 or 1.
   1. β1 is the marginal effect that shows for every unit increase in X, the probability of Y changes by β1
   2. For example, if β1 = 0.4, then a one unit change in X increases the probability that Y = 1 by 40 percentage points
2. Linear probability model with dichotomous X: , where Y is 0 or 1 and X is 0 or 1.
   1. β1 is the change in probability that Y = 1 when moving from X = 0 to X = 1.
   2. For example, if β1 = 0.4, then being in category X = 1 raises the likelihood of Y = 1 by 40 percentage points, compared to being in category X = 0.
3. Linear regression model with continuous X and continuous Y: , where Y and X are continuous.
   1. β1 is the change in Y for a one-unit change in X
   2. For example, if β1 = 0.4, then for a 1 unit increase in X, we would expect a 0.4 unit increase in Y
4. Linear probability model with ln(X): , where Y is 0 or 1.
   1. β1 is the change in probability of Y = 1 for a 1% change in X
   2. For example, if β1 = 0.4, then if X increases by 1%, the probability that Y = 1 rises by 0.4 (40 percentage points)
5. Log-log model: .
   1. β1 is the estimated percent change in your dependent variable Y for a percent change in the independent variable X
   2. The coefficients of a log-log model represent the elasticity of the Y variable with respect to the X variable
   3. For example, if β1 = 0.4, then a 10% change in X gives a 4% change in Y
6. Log-linear model: .
   1. β1 is the estimated percent change in Y for every unit change in X
   2. For example, if β1 = 0.4, then a one unit change in X changes Y by 40%
7. Linear-log model: .
   1. β1 is the estimated change in Y (units/100) for every 1 percent change in X
   2. For example, if β1 = 0.4, then for every 1% change in X changes Y by 0.004 units
8. Logit/Probit:
   1. Equation logit:
   2. Odds ratio (OR) =
      1. Odds ratio is the change in odds of Y for a one unit change in X
      2. For example, if OR = 2, then a one unit increase in X doubles the odds that Y = 1
   3. Marginal effect:
      1. Change in probability that Y = 1 for a one unit change in X
      2. For example, if marginal effect = 0.4, then a one unit increase in X increases the probability that Y = 1 by 0.4 (40 percentage points)
   4. Elasticity
      1. Percentage change in the odds of Y = 1 for a 1% increase in X
      2. For example, if elasticity = 0.4, then a 1% increase in X increases the odds that Y = 1 by 0.4%